North Dakota Department of Health
Indoor Air Quality Info Sheet
Mold in School: What Do We Do?

March 2000

This fact sheet provides information to people who have experienced water damage to their school and presents the health concerns related to mold exposure. It also provides general guidelines on detection, cleanup and removal of mold-contaminated materials.

ABOUT MOLD

What is it?

Molds are simple, microscopic organisms found virtually everywhere, indoors and outdoors. Molds can be found on plants, foods, dry leaves and other organic material. Because mold spores are very tiny and lightweight, they can travel through the air. Mold growths often can be seen in the form of discoloration, ranging from white to orange and from green to brown and black. When molds are present in large quantities, they can cause allergic symptoms similar to those caused by plant pollen.

Should we be concerned about mold in our school?

Yes, if the contamination is extensive. When airborne mold spores are present in large numbers, they can cause allergic reactions, asthma episodes, infections and other respiratory problems for people. Mold can also cause structural damage to buildings.

What does mold need to grow?

For mold to grow, it needs:

- Food sources, such as leaves, wood, paper or dirt.
- A source of moisture.
- A place to grow.

Can mold become a problem in our school?

Yes, if there is moisture available to allow mold to thrive and multiply. The following sources of indoor moisture may cause problems:

- Flooding
- Backed-up sewers
- Leaky roofs
- Humidifiers
- Damp basements or crawl spaces
- Constant plumbing leaks
- Shower steam and leaks
- Condensation pans in HVAC system

HEALTH EFFECTS

How are we exposed to indoor molds?

It is common to find mold spores in the air of buildings and growing on damp surfaces. Much of the mold found indoors comes from outdoor sources. Therefore, everyone is exposed to some mold on a daily basis without evident harm. Mold spores primarily cause health problems when they enter the air and are inhaled in large numbers.

How much mold can make us sick?

It depends. For some people, a relatively small number of mold spores can cause health problems. For other people, it may take much more. The basic rule is, if you can see or smell it, take steps to eliminate the excess moisture and to clean up and remove the mold.

Who is at greater risk when exposed to mold?

Exposure to mold is not healthy for anyone inside buildings. The following individuals appear to be at higher risk for adverse health effects of molds:

- Children and elderly
- Immune-compromised patients (people with HIV infection, cancer chemotherapy, liver disease, etc.)
- Pregnant women
- Individuals with existing respiratory conditions, such as allergies, multiple chemical sensitivity and asthma.

People with these special concerns should consult a physician if they are having health problems.

What symptoms are common?

Typical symptoms (alone or in combination) include:

- Respiratory problems, such as wheezing and difficulty breathing
- Nasal and sinus congestion
- Eye problems, such as burning, watering, reddening, blurred vision and light sensitivity
- Dry, hacking cough
- Sore throat
- Nose and throat irritation
- Shortness of breath
- Skin irritation
- Central nervous system problems (constant headaches, memory problems and mood changes)
- Aches and pains
- Possible fever

Are some molds more hazardous than others?

Yes. Certain types of molds can produce toxins, called *mycotoxins*. Mycotoxins are found in both living and dead mold spores. **Materials permeated with mold need to be removed even after they are disinfected with cleaning solutions.** Allergic and toxic effects can remain in dead spores.

(Over)

DETECTION OF MOLD

How can we tell if we have mold in our school?

If you can see mold, or if there is an earthy or musty odor, you can assume you have a mold problem. Allergic individuals may experience the symptoms listed on the front. Look for previous water damage. Visible mold growth is found behind walls or underneath materials where water has damaged the surface. Look for discoloration and leaching from plaster or sheetrock.

Should we test our school for mold?

Testing is not recommended as the first step to determine if you have a mold problem. Reliable sampling for mold can be expensive and requires equipment not available to the general public.

Few standards are available for judging what **is** an acceptable quantity of mold. All locations contain some outdoor levels of mold. **The simplest approach is this: If you can see or smell mold, you have a problem. Unless the source of moisture is removed and the contaminated area is cleaned and disinfected, mold growth is likely to recur.** Once you know the problem exists, follow the general cleanup procedures below.

GENERAL CLEANUP PROCEDURES

- **!** Identify and correct the moisture source.
- **!** Clean, disinfect and dry the moldy area.
- **!** Bag and dispose of any material that has moldy residues, such as rags, paper, leaves or debris.

What can we save? What should we toss?

Substances that are porous and can trap molds -- such as paper, rags, wallboard, and rotten wood -- should be thrown out. Harder materials such as glass, plastic, or metal can be kept after they are cleaned and disinfected.

Ultimately, it is critical to remove the source of moisture before beginning remedial action, since mold growth will return shortly if an affected area becomes wet again.

Removal of Moldy Materials

After fixing the moisture source and removing excess moisture, the cleanup can begin:

- **!** Wear gloves when handling moldy materials.
- **!** Remove porous materials, such as ceiling tiles, sheetrock, carpeting and wood products.
- **!** Carpeting can be a difficult problem -- drying does not remove the dead spores. If there is heavy mold, the carpet should be discarded.
- **!** Bag and discard the moldy substances.
- **!** Allow the area to dry two or three days or longer.
- **!** If flooded, remove all sheetrock to at least 24 inches above the high water mark. Visually inspect the wall interior and remove any other moldy materials.

CAUTION: Spores are easily released when moldy material is dried out.

Soap Cleanup

Before disinfecting contaminated areas, clean the areas to remove as much of the mold (and food it is growing on) as possible.

- **!** Wear gloves when doing this cleanup.
- **!** Use a non-ammonia soap, detergent or commercial cleaner in hot water and scrub the entire area affected by the mold.
- **!** Use a stiff brush or cleaning pad on block walls or uneven surfaces.
- **!** Rinse clean with water. A wet/dry vacuum is handy for this.

Disinfect Surfaces

- **!** Wear gloves when using disinfectants
- **!** After thorough cleaning and rinsing, disinfect the area with a solution of 10 percent household bleach (e.g., 1½ cup bleach per gallon of water).
- **!** **Never mix bleach with ammonia. The fumes are toxic**.
- **!** Use a sprayer or sponge to apply the solution liberally.
- **!** When disinfecting a large structure, make sure the entire surface is wetted (floors, joists and posts).
- **!** Avoid excessive amounts of runoff or standing bleach.
- **!** Let disinfecting areas dry naturally overnight; this extended time is important to kill all the mold.

Can cleaning up mold be hazardous to our health?

Yes. Exposure to mold can occur during the cleaning stage. Take steps to protect your health during cleanup:

- **!** When handling or cleaning moldy materials, consider using a mask or respirator as protection from airborne spores.
- **!** Wear protective clothing that is easily cleaned or discarded.
- **!** Use rubber gloves.
- **!** Ask bystanders to leave areas that are being cleaned.
- **!** Work over short time spans and rest in a fresh air location.
- **!** Ventilate the school well during and after the work.

After cleaning everything as thoroughly as possible, can mold odors persist?

Yes. It is possible that odors may persist. Continue to dry out the area and search for any hidden areas of mold. If the area continues to smell musty, you may have to re-clean the area again. (Follow the cleaning steps given in this sheet.) Continue to dry and ventilate the area. Don't replace flooring or begin rebuilding until the area has dried completely.

FOR ASSISTANCE

Contact your local public health unit or the North Dakota Department of Health at 701.328.5188 or 1.800.755.1625, or visit the website at www.health.state.nd.us/ndhd.

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